



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,363	02/26/2004	Robert S. Taylor	2003-IP-012051U1	4792

7590 12/02/2005

Robert A. Kent
Halliburton Energy Services
2600 South 2nd Street
Duncan, OK 73536-0440

EXAMINER

COY, NICOLE A

ART UNIT PAPER NUMBER

3672

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/787,363	Applicant(s) TAYLOR ET AL.	
	Examiner Nicole Coy	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
 4a) Of the above claim(s) 33-79 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-79 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/8/05, 2/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-63, drawn to a method of treating a subterranean formation, classified in class 166, subclass 308.01.
 - II. Claims 64-79, drawn to a subterranean servicing fluid, classified in class 507, subclass 202.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product can be used in other well treatment processes such as consolidating.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. This application contains claims directed to the following patentably distinct species of the claimed invention: Species 1: a method of fracturing, claims 17-32; Species 2: a method of gravel packing, claims 33-48; and Species 3: a method of drilling, claims 49-63.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-16 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

5. During a telephone conversation with Robert Kent on November 14, 2005 a provisional election was made without traverse to prosecute the invention of Group I, Species 1, claims 1-32. Affirmation of this election must be made by applicant in

Art Unit: 3672

replying to this Office action. Claims 33-79 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 12, 16-20, 28, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Mzik (USP 4,825,952).

With respect to claims 1 and 17, Mzik discloses a method of treating/fracturing a subterranean formation comprising the steps of: providing a servicing fluid comprising carbon dioxide and a hydrocarbon blend, wherein the hydrocarbon blend comprises at least about 65% hydrocarbons having from six carbons (C.sub.6) to eleven carbons (C.sub.11) (see abstract and column 2 lines 34-38); and placing the servicing fluid into the subterranean formation (see column 1 lines 12-15).

With respect to claims 2 and 18, Mzik discloses a hydrocarbon blend that comprises at least about 65% hydrocarbons having from seven carbons (C.sub.7) to ten carbons (C.sub.10) (see abstract and column 2 lines 34-38).

With respect to claims 3 and 19, Mzik discloses a hydrocarbon blend where about 85% of the hydrocarbon blend comprises hydrocarbons having eight carbons (C.sub.8), hydrocarbons having nine carbons (C9), or a mixture of hydrocarbons having eight carbons (C.sub.8) and hydrocarbons having nine carbons (C9) (see abstract and column 2 lines 34-48).

With respect to claims 4 and 20, Mzik discloses a hydrocarbon blend has a Reid Vapor pressure below about 2 psi (The Reid vapor pressure would inherently be below about 2 psi as the composition of Mzik is substantially identical to the claimed composition).

With respect to claims 12 and 28, Mzik discloses a servicing fluid that further comprises particulates (see abstract).

With respect to claims 16 and 32, Mzik discloses a servicing fluid that comprises from about 30 volume % to about 80 volume % carbon dioxide by volume of hydrocarbon blend (see column 2 lines 34-38, wherein Mzik discloses 15-90% carbon dioxide by volume of hydrocarbon blend).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3672

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 5, 6, 14, 15, 21, 22, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mzik.

With respect to claims 5 and 21, Mzik teaches that a hydrocarbon component can be added in an amount of 5-85 %. Mzik further teaches that the hydrocarbon component can be a C₅-C₁₄ constituent. Mzik does not specifically teach a hydrocarbon blend with less than 1% hydrocarbons having more than ten carbons. However, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Routine experimentation would have led one having ordinary skill in the art to form a hydrocarbon blend with less than 1% hydrocarbon having more than 10 carbons.

With respect to claims 6 and 22, Mzik teaches that a hydrocarbon component can be added in an amount of 5-85 %. Mzik further teaches that the hydrocarbon component can be a C₅-C₁₄ constituent. Mzik does not specifically teach a hydrocarbon blend with less than 1% hydrocarbons having fewer than seven carbons. However, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Routine experimentation would have led one having ordinary skill in the art to form a hydrocarbon blend having less than 1% hydrocarbons having fewer than seven carbons by.

With respect to claims 14 and 30, Mzik teaches that a hydrocarbon component can be added in an amount of 5-85 %. Mzik further teaches that the hydrocarbon component can be a C₅-C₁₄ constituent. Mzik does not specifically teach a hydrocarbon blend with less than 1% hydrocarbons having fewer than seven carbons about 5% hydrocarbons having seven carbons, about 44% hydrocarbons having eight carbons, about 43% hydrocarbons having nine carbons, about 8% hydrocarbons having ten carbons, and less than about 1% hydrocarbons having more than ten carbons. However, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Routine experimentation would have led one having ordinary skill in the art to form a hydrocarbon blend comprising less than about 1% hydrocarbons having fewer than seven carbons (C.sub.7), about 5% hydrocarbons having seven carbons (C.sub.7); about 44% hydrocarbons having eight carbons (C.sub.8); about 43% hydrocarbons having nine carbons (C.sub.9); about 8% hydrocarbons having ten carbons (C.sub.10); and less than about 1% hydrocarbons having more than ten carbons (C.sub.10).

With respect to claims 15 and 31, Mzik teaches that a hydrocarbon component can be added in an amount of 5-85 %. Mzik further teaches that the hydrocarbon component can be a C₅-C₁₄ constituent. Mzik does not specifically teach a hydrocarbon blend comprising substantially no hydrocarbons having more than eleven carbons. However, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re

Art Unit: 3672

Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Routine experimentation would have led one having ordinary skill in the art to form a hydrocarbon blend comprising substantially no hydrocarbons having more than eleven carbons.

11. Claims 7-10, 13, 23-26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mzik in view of Taylor et al. (USP 6,511,944).

With respect to claims 7-10 and 23-26, Mzik does not teach a service fluid comprising a gelling agent present in an amount in the range of from about 0.1% to about 2.5% by weight of the hydrocarbon blend. Taylor teaches a hydrocarbon servicing fluid comprising a gelling agent of ferric iron or aluminum polyvalent metal salt of a phosphoric acid ester present in an amount in the range of from about 0.1% to about 2.5% by weight of the hydrocarbon blend in order to minimize volatile phosphorus in refinery distillation towers (see column 3 lines 56-59 and column 6 lines 52-55). It would have been obvious to one having ordinary skill in the art to modify the servicing fluid of Mzik by adding a gelling agent of ferric acid in the amount of 0.1% to 2.5% as taught by Taylor et al. in order to minimize volatile phosphorus in refinery distillation towers.

With respect to claims 13 and 29, Mzik does not teach a servicing fluid comprising a delayed gel breaker. However, Taylor et al. teaches adding a delayed gel breaker to a hydrocarbon servicing fluid in order to cause the hydrocarbon fracturing fluid to revert to a thin fluid that is produced back after fractures are formed in the subterranean formation (see column 5 lines 31-35). It would have been obvious to

Art Unit: 3672

modify the servicing fluid of Mzik by adding a delayed gel breaker as taught by Taylor et al. in order to cause the hydrocarbon fracturing fluid to revert to a thin fluid that is produced back after fractures are formed in a subterranean formation.

12. Claims 11 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mzik in view of Greminger, Jr. et al. (USP 3,954,626).

Mzik does not teach a fracturing fluid which comprises a LPG. Greminger, Jr. et al. teaches a servicing fluid which comprises LPG in order to provide a mixture having a higher critical temperature than carbon dioxide alone (see column 3 lines 29-32). It would have been obvious to modify the invention of Mzik by adding a LPG fluid to the servicing/fracturing fluid as taught by Greminger, Jr. et al. in order to provide a mixture having a higher critical temperature than carbon dioxide alone.

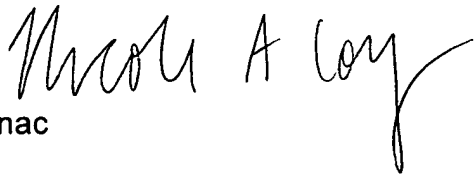
Conclusion


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Coy whose telephone number is 571-272-5405. The examiner can normally be reached on M-F 8:00-5:30, 1st F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


nac


DAVID BAGNELL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600